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Income Inequality, Redistribution and Domestic Terrorism

Tim Krieger* and Daniel Meierrieks†

Abstract

We analyze the effect of income inequality on terrorism for a sample of 113 countries between 1984 and 2012. We provide evidence, robust to various methodological changes (e.g., the use of instrumental-variable approaches), that higher levels of income inequality are associated with more domestic terrorism. Analyzing the underlying transmission channels, we find that this effect is in parts due to the ill effects of income inequality on institutional outcomes (e.g., corruption) which in turn motivate domestic terrorism. We also investigate whether redistributive efforts can be effective in reducing terrorist activity. We find that countries that redistribute more see less domestic terrorism, in parts because redistribution improves institutional conditions. In light of this latter finding, we also discuss the implications of our analysis for policymakers who want to counter domestic terrorism through redistributive policies.

JEL Classification: D74, I38, O15, C36

Keywords: income inequality; terrorism; Gini coefficient; relative deprivation; redistribution

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1. Introduction

There are substantial economic and social costs associated with terrorism.¹ Terrorism may not only destroy lives and property but may also, e.g., reduce investment (e.g., Crain and Crain, 2006) and trade (e.g., Nitsch and Schumacher, 2004) as well as influence government spending in ways that impair economic activity (e.g., Gupta et al., 2004). Consequently, terrorism and the associated political instability may be harmful to economic growth (Gupta et al., 2004; Crain and Crain, 2006; Sandler and Enders, 2008). Furthermore, terrorism may have substantial political effects, contributing to, e.g., politico-ideological polarization and affecting election outcomes (e.g., Berrebi and Klor, 2008).

To reduce terrorism and with it its socio-economic as well as political costs, it is necessary to understand in which social conditions terrorism is rooted. Here, influential voices have repeatedly related *income inequality* to the emergence of terrorism and violence. For instance, in 2013 Pope Francis stated that “until exclusion and inequality in society and between peoples are reversed, it will be impossible to eliminate violence [...]”.²

So far, the empirical evidence on the relationship between income inequality and terrorism is sparse and inconclusive. Piazza (2011) finds that more income inequality is indeed associated with more domestic terrorism, while Enders et al. (2016) find that income inequality leads to more domestic and transnational terrorism before 1993 (when left-wing terrorism abounded) but not for the post-1993 period (when religious terrorism became more dominant).³ However,

¹ According to Enders et al. (2011: 321), terrorism can be defined as “the premeditated use or threat to use violence by individuals or subnational groups against noncombatants in order to obtain a political or social objective through the intimidation of a large audience beyond that of the immediate victims.” This implies that terrorism may be employed by weak, marginalized actors (e.g., the *Brigate Rosse* in Italy) but also by large organizations exercising territorial control in large-scale civil wars (e.g., the *Sendero Luminoso* in Peru) (Findley and Young, 2012).

² See <http://tinyurl.com/qclzcn6>.

³ *Domestic terrorism* refers to terrorism that only affects one country (in which the terrorist incident occurs and from which both perpetrators and victims hail); *transnational terrorism* means that more than one country is involved (e.g., as citizens of another country are victimized in an attack).

other empirical studies that control for inequality provide little evidence that income inequality systematically matters to terrorism (e.g., Abadie, 2006; Kurrild-Klitgaard et al., 2006; Piazza, 2006).⁴ What is more, most empirical studies on the determinants of terrorism do not consider the influence of inequality at all. Indeed, as part of their review of 43 empirical studies on the determinants of terrorism, Gassebner and Luechinger (2011: 241) find that only eight of them consider the role of income inequality in terrorism.

We contribute to the sparse and inconclusive literature on the *nexus between inequality and terrorism* in several ways. First, besides using more recent data, we provide a comprehensive empirical study of the role of inequality in terrorism, putting a special emphasis on the role of *endogeneity* in the inequality-terrorism nexus. Second, we investigate various potential *transmission channels* from income inequality to terrorism. The underlying mechanisms of the inequality-terrorism nexus have so far not been empirically analyzed. Third, we analyze how *redistribution* (i.e., the reduction of income inequality through taxation and other policies) affects terrorism. Here, we add to a small body of research (Burgoon, 2006; Krieger and Meierrieks, 2010) emphasizing the potentially beneficial role of functioning social welfare systems in reducing terrorism. Fourth, we investigate which transmission channels explain a potential relationship between redistribution and terrorism, also allowing us to ascertain to what extent redistribution may ultimately—as a policy tool—help curtailing the terrorist threat.

To preview our empirical findings, for a sample of 113 countries for the 1984-2012 period we show that higher levels of income inequality result in more domestic terrorist activity. This effect is quantitatively substantive and holds when endogeneity is accounted for. With respect to the transmission channels from inequality to terrorism, our analysis suggests that income inequality may indirectly promote terrorism by contributing to the erosion of institutional quality, e.g., by undermining the rule of law. There is little evidence of indirect effects of inequality on terrorism via a deterioration of socio-economic conditions. As a consequence of these findings, we analyze whether redistribution negatively affects domestic terrorism. We find that countries that redistribute more see less domestic terrorism, where this effect works—

⁴ This notion is mirrored by the evidence on the relationship between inequality and civil war. Dixon (2009: 716) reviews 46 quantitative studies on the causes of civil war and comes to the conclusion that there is “relative paucity of evidence for the widespread assumption that ‘vertical’ economic inequality [...] produces civil war”.

in parts—by ameliorating institutional grievances. In sum, our empirical analysis suggests that policymakers ought to take seriously the inflammatory effects of inequality. To some extent, they may be able to counter them through policies geared towards greater redistribution and income equality.

The remainder of this paper is organized as follows. In Section 2 we discuss the theoretical and empirical literature on the effect of inequality on terrorism in more detail. In Section 3 we introduce the data to empirically study the inequality-terrorism nexus. Our main empirical results are reported in Section 4. Section 5 examines the impact of redistribution on domestic terrorism. Section 6 concludes.

2. Income Inequality and Terrorism

Scholars have empirically analyzed the relationship between inequality and various types of political violence (e.g., civil wars, riots) and social deviance (e.g., crime) since over half a century, with theoretical discussions of the inequality-conflict nexus going back much further (e.g., to Karl Marx). In this paper we focus on the inequality-terrorism relationship because—as already discussed above—there is relatively little evidence on it, while at the same time there is much speculation about this relationship in the public debate. Here, we primarily aim at contributing to the terrorism literature by studying the inequality-terrorism relationship much more rigorously (e.g., by examining transmission channels). Below, we discuss the theoretical underpinnings of this relationship in more detail.

2.1 Direct Linkages

2.1.1 Relative Deprivation Theory

A direct link between inequality and terrorism follows from the so-called *relative deprivation theory*. This theory posits that members of society evaluate their economic position relative to a reference group (Gurr, 1970; Yitzhaki, 1979). It argues that members of society develop feelings of discontent and frustration when their economic position compares unfavorably to this reference group (i.e., when they are *relatively* deprived). The theory postulates that these feelings matter strongly to the genesis of political violence: Inequality induces frustration, which provokes an aggressive response to vent one's frustration (Muller and Weede, 1994). This relationship is called the “frustration-aggression mechanism” (e.g., Gurr, 1979; Muller and Weede, 1994). The direct link between organized political violence and the frustration due to relative deprivation is explicitly stated by Gurr (1970: 12-13):

“The primary causal sequence in political violence is first the development of discontent, second the politicization of that discontent, and finally its actualization in violent action against political objects and actors. Discontent arising from the perception of relative deprivation is the basic, instigating condition for participants in collective violence.”

Relative deprivation theory has been used to explain diverse phenomena of social deviance, protest and political violence such as crime (e.g., Kawachi et al., 1999; Wilkinson and Pickett, 2007), support for revolutions (MacCulloch, 2005), riots (e.g., Chandra and Williams Foster, 2005) as well as civil wars and rebellions (e.g., Gurr, 1970; Muller and Weede, 1994). With respect to terrorism, a test of relative deprivation theory can be found in Piazza (2006).

2.1.2 Direct Linkages: Rational-Choice Theory

Beside the relative deprivation framework, the direct relationship between terrorism and income inequality can also be established using a *rational-choice approach* to terrorism. For instance, Sandler and Enders (2004: 311) argue in favor of such a perspective, where “terrorists [are characterized] as rational actors who maximize expected utility or net payoffs subject to constraints.”⁵ Higher levels of income inequality can be expected to influence the calculus of rational terrorists in ways that make terrorism more likely.⁶ For instance, inequality ought to aid terrorist mobilization by lowering terrorism’s opportunity costs, given that the likelihood to earn a fair income share through ordinary economic activity is comparatively smaller. Similarly, income inequality is expected to raise the (potential) benefits of terrorism especially if terrorists aim at achieving economic equity and extracting associated concessions from the

⁵ Earlier applications of rational-choice theory to the case of terrorism can be found in, e.g., Landes (1978) and Sandler et al. (1983).

⁶ Note that rational behavior and utility maximization are not the focus of relative deprivation theory. For instance, with respect to the central frustration-aggression mechanism of relative deprivation theory, Muller and Weede (1994: 41) argue that “[d]iscontent (or frustration) resulting from a condition of relative deprivation induces anger, which is assumed to provoke an aggressive response *regardless of the utility of aggression*” (emphasis added). In other words, relative deprivation theory postulates that aggression would occur even if this aggression produces disutility.

government. In other words, income inequality may make terrorism more attractive for rational actors who want to change the distribution of resources in society in their favor.

2.2 Indirect Linkages

Besides a direct relationship between inequality and terrorism, inequality may also magnify certain social conditions that in turn lead to terrorism, where these social conditions would then constitute *transmission channels* from inequality to terrorism.

2.2.1 Socio-Economic Factors

Inequality may lead to *poorer socio-economic outcomes*. For this study we focus on the socio-economic conditions of *education* and *investment*. Here, a number of studies find that inequality negatively affects these conditions at the country-level (Thorbecke and Charumilind, 2002; Easterly, 2007; Neckerman and Torche, 2007; Wilkinson and Pickett, 2007). For instance, Easterly (2007) shows that higher levels of income inequality are associated with lower secondary school enrollment rates, e.g., as only the richer segments of society may be able to afford private education. What is more, by reducing human capital accumulation (in terms of education), income inequality may also reduce overall economic activity (e.g., with respect to domestic investment).

By depressing socio-economic development, inequality may consequently—indirectly—foster terrorist activity: When socio-economic conditions are poor, violence (to counter such grievances) may be more attractive relative to non-violence. Relating to the rational-choice framework introduced above, under such circumstances the opportunity costs of terrorism are particularly low. Indeed, some empirical studies suggest that terrorism is more likely when socio-economic conditions are unfavorable (e.g., Blomberg and Hess, 2008; Caruso and Schneider, 2011; Freytag et al., 2011; Piazza, 2011; Enders et al., 2016).

2.2.2 Institutional Quality

However, the evidence on the determinants of terrorism does not conclusively show that terrorism is rooted in poor socio-economic conditions. Rather, in their review article Krieger and Meierrieks (2011: 19) conclude that economic factors matter less to the genesis of terrorism than institutional variables, arguing that “[...] little evidence indicates that poor economic conditions alone cause terrorism. [...] [T]he institutional order seems to trump the economic one.” Indeed, a number of studies suggest that sound institutions also deter terrorism (e.g., Krueger and Maleckova, 2003; Basuchoudhary and Shughart, 2010; Choi, 2010; Gassebner and

Luechinger, 2011). For instance, Choi (2010) finds that terrorism is more likely in countries that are characterized by a deficient rule of law.

This necessitates considering the potential indirect effect of inequality on terrorism via institutional quality. In the subsequent analysis, we focus on the variables *corruption*, the *rule of law* and *human rights violations*.⁷ Here, the argument is that inequality may produce *poorer politico-institutional outcomes*. For instance, the rich may use their unequal access to a country's income distribution to buy (e.g., through political contributions) favorable legislation and court decisions, consequently subverting the rule of law (Glaeser et al., 2003). Evidence provided by, e.g., Jong-sun and Khagram (2005), Easterly (2007) and Loyaza et al. (2012) indeed suggests that inequality is associated with worse institutional outcomes such as more corruption, less economic freedom and market-friendliness, reduced government effectiveness and a weaker rule of law. Consequently, this opens up an additional indirect pathway from inequality to terrorism: Inequality leads to the erosion of institutions, which in turn creates grievances and opportunities conducive to terrorism. For instance, in a rational-choice framework a deficient rule of law—induced by income inequality—may lower the costs of terrorism (because counter-terrorism effectiveness is hampered) as well as its opportunity costs (because conflict resolution via the domestic justice system is impeded), thus swaying the terrorists' calculus in ways that make terrorism a more attractive option.

2.3 Main Hypothesis

In sum, theory suggests that higher levels of income inequality at the country-level ought to lead to more terrorism.⁸ Inequality may—directly—lead to more terrorist activity by fueling

⁷ Institutions (in the sense of Douglass North) are stable formal and informal rules which constrain human behavior by affecting incentives (Voigt, 2013). It is difficult to measure these institutions precisely and directly (Voigt, 2013). Therefore, we follow the literature and use suitable proxies (such as rule of law or corruption indices) which tend to measure “institutional quality” or “institutional outcomes” rather than the institutions themselves (for a further discussion of this issue, see Voigt, 2013).

⁸ In our opinion this line of reasoning is not contradictory to evidence at the *individual-level* that terrorists do not tend to be especially poor as, e.g., found by Krueger and Maleckova (2003) for members of Hezbollah and Palestinian suicide bombers. For one, terrorist organizations may be particularly interested in recruiting affluent individuals because such individuals also

frustration in accordance with relative deprivation theory, where terrorism serves as a means to voice discontent. Similarly, rational-choice theory predicts a direct effect of inequality on terrorism due to the former's effect on the benefits (related to, e.g., changing the economic-distributional status quo through violence) and opportunity costs of terrorism. Furthermore, inequality may—indirectly—fuel terrorism by contributing to poorer socio-economic outcomes and impairing institutional quality, which in turn facilitates terrorism. This leads to the following hypothesis:

A higher level of income inequality is associated with more terrorist activity.

3. Data and Empirical Method

To test our main hypothesis on the relationship between inequality and terrorism, we collect annual data for a maximum of 113 countries for the 1984-2012 period. The summary statistics are reported in Table 1. A country list is provided in the appendix.

—Table 1 here—

3.1 Dependent Variables

Our main dependent variable to indicate terrorist activity is the *number of domestic terrorist incidents* per country-year observation. We focus on domestic terrorism because it is far more common than transnational terrorism (Enders et al. 2011). More importantly, domestic terrorism ought to be more strongly swayed by local income inequality. Indeed, Piazza (2006), using data on transnational terrorism, does not find that inequality matters, while Piazza (2011), using data on domestic terrorism, finds evidence inequality promotes domestic terrorism. As a robustness check, we also report findings where we use an alternative dependent variable, the *number of domestic terrorism victims* per country-year observation, where victims refers to the number of individuals killed or injured in domestic terrorist attacks.

tend to be better educated, which in turn ought to raise “terrorist productivity”. Such considerations, however, do not matter at the country-level. For another, affluent participants in terrorism may be primarily inspired by economic inequality felt by their countrymen (rather than their own), which Krueger and Maleckova (2003: 137) call a “Robin Hood model of terrorism”.

Data on both variables is provided by Enders et al. (2011) and Gaibullov et al. (2012). These authors use raw data from the *Global Terrorism Database (GTD)* first introduced in LaFree and Dugan (2007). Since 1970 the GTD has tracked global terrorism by examining publicly available sources (e.g., newspaper articles, government reports). However, the GTD does not differentiate between domestic and transnational terrorism. This is only done by Enders et al. (2011) and Gaibullov et al. (2012), in addition to also alleviating further methodological problems (e.g., coding issues) associated with the GTD data.

3.2 Inequality Data

We measure income inequality by the *Gini coefficient* which reflects, as an indicator of “vertical” income inequality, the extent to which the income distribution between individuals within an economy deviates from a perfectly equal distribution. It ranges from 0 (perfect equality) to 100 (perfect inequality). As shown by Yitzhaki (1979), higher values of the Gini coefficient coincide with higher relative deprivation in a society and thus lower social satisfaction. What is more, using the Gini coefficient may allow us to capture the indirect linkages between inequality and terrorism. For instance, higher income inequality also plausibly coincides with greater opportunities for the rich to shape institutions in their favor, resulting in lower institutional quality, which may give rise to terrorism. Similarly, it is expected to coincide with greater economic vulnerability of those at the bottom of the income distribution, which may limit their options to, e.g., invest in education, consequently leading to poorer socio-economic outcomes that subsequently incite terrorism. In sum, we believe the Gini coefficient to be a sound indicator to test our main hypothesis of direct and indirect effects of inequality on terrorism.

The data for the Gini coefficient come from the *Standardized World Income Inequality Database (SWIID)* (Solt, 2009). From the SWIID we extract the Gini coefficient of net income, i.e., we consider the level of inequality that persists after taxes and other forms of redistribution are taken into account. Net-income inequality (rather than income inequality produced by the market-place) is the kind of inequality actually felt by society and may thus potentially instigate frustration and, ultimately, terrorism.

We use the SWIID for three reasons. First, the SWIID has, in comparison to other inequality datasets (e.g., the *Luxembourg Income Study*), a greater coverage with respect to both time and space (Solt, 2009; Ferreira et al., 2015). Second, by means of computational procedures the SWIID also aims at improving the comparability of income inequality statistics between

countries. This standardization of inequality data allows for more consistent cross-national research (Solt, 2009). Third, the SWIID provides data on inequality before and after taxation and other forms of redistribution. This allows us to explicitly consider the influence redistribution has on terrorism, as we do in Section 5.

Ferreira et al. (2015) provide a critical discussion of various cross-country datasets on income inequality. They argue that the SWIID's use of imputation methods to increase its coverage and comparability may negatively affect the SWIID's reliability especially when these methods are applied to data-poor regions (e.g., developing countries), creating a potential trade-off between data coverage and quality. To assess the robustness of our findings, we therefore also use an alternative indicator of inequality, the *Theil index* drawn from the *University of Texas Inequality Project (UTIP)* (for an introduction to this dataset, see Galbraith and Kum, 2005). The Theil index as a measure of pay inequality is calculated from industrial sector statistics provided by the *United Nations Industrial Development Organization* (for more information on the underlying data and construction of the index, see Galbraith and Kum, 2005). As with the Gini coefficient, higher values of the Theil index correspond to more income inequality. While the coverage of the UTIP is considerably smaller than SWIID, the former does not rely on imputation methods and is therefore expected to be more reliable. Reassuringly, the SWIID Gini coefficient and the UTIP Theil index are rather strongly and positively correlated ($r=0.61$, $p<0.01$).

3.3 Control Variables

First, we consider the impact of regime type (*democracy*) on terrorism. We use the *Polity2 score* from the *Polity IV Project* (Marshall et al., 2014). The variable ranges from 0 (strongly autocratic) to +10 (strongly democratic), depending on how a country's political system is organized (e.g., with respect to the openness of political competition).⁹ Consistent with the empirical evidence summarized by Chenoweth (2013: 357), we expect that “the more democratic a country is, the more terrorism it should experience”. Various mechanisms may account for a positive democracy-terrorism relationship: (i) the protection of civil liberties by democratic institutions compromising counter-terrorism measures (e.g., associated with the surveillance of potential terrorists), (ii) a free press in democracies that facilitates terrorist

⁹ We rescaled the original Polity2 score, which ranges from -10 to +10, to facilitate the interpretation of our findings.

publicity, (iii) the sensitivity of democratic publics to civilian casualties from terrorism and (iv) the vulnerability of democracies to mobilization and popular protest (Chenoweth, 2013).

Another variable we control for is *civil war*. It is operationalized by a dummy variable equal to unity if a country sees more than 1,000 battle deaths from a civil war in a given year, using data from the *UCDP/PRIO Armed Conflict Dataset* (Pettersson and Wallensteen, 2015). As noted by Findley and Young (2012), terrorist activity often occurs within civil wars. We thus expect a positive correlation between incidences of civil war and terrorism.

Population size is measured by a country's (logged) number of residents, with the data coming from the *World Development Indicators (WDI)* (World Bank, 2014). Consistent with the very robust evidence from the existing literature on the determinants of terrorism (Gassebner and Luechinger, 2011; Krieger and Meierrieks, 2011), we expect population size to be a positive predictor of terrorism. For instance, the positive association between population size and terrorism may be due to a scale effect, where larger countries ought to exhibit more terrorism targets, victims and potential terrorists.

We also consider the effect of *economic development*, measured by a country's (logged) per capita income at constant 2005 US\$.¹⁰ The data come from the WDI. Controlling for economic development ought to help us disentangle the effects of poverty and inequality on terrorism.¹¹ Poor economic conditions may create grievances that result in terrorism. For instance, Freytag et al. (2011) argue that lower levels of income coincide with lower opportunity costs of violence, making it more attractive to challenge the existing economic status quo by means of terrorism.

¹⁰ As part of our robustness analysis, we replace per capita income with an alternative measure of socio-economic development: life expectancy at birth; this variable is drawn from the WDI. One may expect this variable to be less likely to be endogenous to terrorism and more likely to measure absolute poverty. Using this alternative indicator does not change our empirical findings regarding both the effect of inequality and socio-economic development on terrorism reported below.

¹¹ Similar to us, e.g., Abadie (2006) and Piazza (2011) also use per capita income as an indicator of poverty.

Government consumption (government size) is measured by all government current expenditures for purchases of goods and services as a share of national GDP. The data comes from the WDI. A larger government size may invite terrorism for the purpose of rent-capturing, leading to a positive correlation between government consumption and terrorism (Kurrild-Klitgaard et al., 2006). At the same time, government size may be correlated with a government's redistributive activities and thus affect our findings regarding the inequality-terrorism nexus.

Finally, we examine the effect of *ethnic contestation* on terrorism. It is measured by the (logged) share of the population excluded from power relative to the ethno-politically relevant population, where this variable is drawn from the *Ethnic Power Relations Dataset* of Wimmer et al. (2009). This variable measures the risk of ethnic conflict within a country attributable to ethnic divisions, with a larger share of the population being excluded from power being expected to increase ethnic conflict risk. Previous research (Basuchoudhary and Shughart, 2010; Piazza, 2011) has shown that ethnic tensions are positively associated with terrorism, e.g., because ethnic tensions create additional grievances (e.g., discrimination) conducive to terrorism.¹²

As a robustness check, we amend our baseline model with additional variables. First, we control for *economic growth* (WDI data). Slower economic growth may promote terrorism. At the same time, controlling for economic growth may allow us to account for (short-run) business cycle effects that may also affect the income distribution. Second, we control for *regime durability*, i.e., the number of years since the most recent regime change (Polity IV Project data). We expect more instable regimes to be more likely to experience terrorism as, e.g., instability creates power vacuums that make it easier to carry out terrorism. Finally, we include a control for *population density* (WDI data). Potentially, population density correlates with resource

¹² We use two alternative measures of ethnic conflict as part of our robustness check. First, we use an indicator of ethnic tensions from the *International Country Risk Guide (ICRG)* (PRS Group, 2014). Second, we employ the share of the discriminated population (relative to the total population) from the *Ethnic Power Relations Dataset*. Using these alternative indicators produces findings that are consistent with the results reported in the main text (results available upon request).

scarcity, where conflicts over resources are expected to become more likely as population density increases.¹³

3.4 Empirical Approach

To examine the role of income inequality in terrorism, we run a series of negative binomial regressions.¹⁴ We choose this econometric method due to the count-data nature of our dependent variables (the number of domestic terrorist attacks and victims, respectively) which exhibit over-dispersion (i.e., variances larger than their respective means). When estimating the count-data models, we include—in addition to the controls discussed above—a set of regional dummies and year dummies to control for heterogeneity, autocorrelation and trending effects.¹⁵ To further account for characteristics that are inherent in panel data, we use country-clustered standard errors that are robust to heteroskedasticity and autocorrelation.

4. Empirical Results

4.1 Main Results

The negative binomial regression results are reported in Table 2. Considering our main variable of interest, we find that higher levels of income inequality are associated with more domestic terrorism. This effect is robust to different model specifications, the use of an alternative

¹³ Additional controls (all drawn from the ICRG) we consider as robustness checks are measures of bureaucratic quality (to indicate state capacity), religious tensions (to indicate religious sources of terrorism), external conflict risk (accounting for the role of foreign policy in terrorism) as well as a lagged dependent variable. Adding these variables does not change our main findings (results available upon request).

¹⁴ The use of alternative estimation methods (e.g., OLS, logit/probit and zero-inflated negative binomial models) does not affect our main finding concerning the influence of income inequality on terrorism (results available upon request).

¹⁵ We include regional dummies for South and North America, Western Europe, Sub-Saharan Africa, the Middle East and Northern Africa as well as the former Soviet Union countries of Eastern Europe and Central Asia, with the remaining Asia-Pacific countries being the reference group. Dropping the regional and/or time dummies from our models does not change our main findings.

dependent variable and a different measure of income inequality (the Theil index). That is, the negative binomial regression results are in line with our main hypothesis.

—Table 2 here—

As reported in the appendix, our results regarding a terrorism-increasing effect of inequality hold when we drop the Western European countries (which tend to most strongly redistribute income) and/or the countries of South America (which tend to see the highest levels of income inequality) from the sample. Our main results are also not affected when we create sub-samples for the Cold War era or the post-Cold War era (given the differences in geographical distribution and ideological underpinnings of terrorism during these two eras). This latter result partially contradicts Enders et al. (2016) who report a terrorism-increasing effect of inequality only for the Cold War era.

Next, we want to consider the substantive effects of inequality on terrorism. Potentially, statistically significant results are not practically significant. To study the substantiveness of the effect of inequality on terrorism, we transform the regression coefficients associated with the baseline model (specification (1) in Table 2) into *incidence-rate ratios (IRR)*. The IRR associated with income inequality is $IRR=1.074$. Thus, a one-unit increase in income inequality (a one-percent increase in the Gini coefficient) leads, *ceteris paribus*, to a 7.4% increase in the number of domestic terrorist attacks, pointing to a moderately substantive effect of inequality on terrorism.

Another way to examine the quantitative effect of inequality on terrorism is to study the predictive marginal effects, as presented in Figure 1. Here, we hold all covariates from specification (1) at their respective means (regional and time dummies are held at zero) and only vary the level of inequality. Again, the effect of inequality on terrorism is not only statistically but also practically significant. For instance, while our model predicts approximately 4.1 domestic terrorist incidents per country-year observation for a Gini coefficient of 30 (approximately one standard deviation below the sample mean for inequality), at a Gini coefficient of 38 (the sample mean) we predict 5.8 incidents, while at a Gini coefficient of 50 (approximately one standard deviation above the mean) our model predicts roughly 9.5 domestic terrorist incidents.

—Figure 1 here—

After having established that inequality is robustly associated with terrorism, we now briefly consider the controls. First, there is no evidence that democratic institutions are related to domestic terrorism.¹⁶ Second, incidences of civil war are associated with more terrorist activity, consistent with the notion that armed groups within a civil war may use terrorism as a strategy. Third, population size is a positive predictor of terrorism. For instance, this may be due to policing costs that increase with population size and thereby reduce counter-terrorism efficiency. Fourth, both per capita income¹⁷ and government consumption share no robust relationship with terrorism. The former finding is in line with the empirical mainstream that low levels of economic development (or high levels of poverty) do not matter to terrorism (Krueger and Maleckova, 2003; Gassebner and Luechinger, 2011; Krieger and Meierrieks, 2011). Fifth, ethnic discrimination (as indicated by the share of the excluded population relative to the ethno-politically relevant population) is associated with more domestic terrorism. This suggests that ethnic grievances also matter to terrorism, as previously found by Basuchoudhary and Shugart (2010). Finally, our results are robust to the inclusion of additional covariates, where both economic growth and regime durability are not found to influence terrorism, while higher levels of population density—as expected—positively correlate with domestic terrorism.

4.2 Endogeneity

4.2.1 Sources of Endogeneity

Next, we want to examine whether our estimation results are affected by endogeneity. For our study endogeneity may have two sources. First, measurement error may play a role. As argued by Ferreira et al. (2015), the use of imputation methods to increase the SWIID's coverage may

¹⁶ As a robustness check, we also include the square of the Polity2 score to account for curvilinear effects of democracy on terrorism. We indeed find evidence of an inverted U-shape relationship between democracy and terrorism, so that anocratic countries are more vulnerable to terrorism than both their fully autocratic and democratic counterparts. However, the inclusion of the square of the Polity2 score does not affect our main result concerning the effect of inequality on terrorism (results available upon request).

¹⁷ Enders et al. (2016) argue that income levels and terrorism may be non-linearly related. To account for this, we include the square of GDP per capita in the baseline model as a robustness check. We, however, find no evidence that domestic terrorism is more likely at a middle-income range. In addition to that, this robustness check does not influence our main finding regarding the impact of income inequality on domestic terrorism (results available upon request).

negatively affect the SWIID's reliability especially when such imputation methods are applied to data-poor regions.

Second, endogeneity in the inequality-terrorism nexus may be due to *simultaneity*. That is, income inequality may not only affect terrorism, but terrorism may also have distributional consequences. For one, terrorism may affect public spending, with spending on the military and security usually being prioritized in times of a terrorist threat over public expenditures for education, health and other public services (Gupta et al., 2004). Such effects may feed through to the economy's income distribution, e.g., as social welfare programs designed to reduce inequality are cut in favor of security spending. Also, terrorism may reduce a country's tax base (e.g., by reducing economic activity through increased insecurity) and decrease the efficiency of its tax administration (Gupta et al., 2004). This ought to constrain the amount of resources available to the government for public spending on (inequality-reducing) welfare programs. Finally, terrorism may benefit some industrial sectors, while damaging others. For instance, Berrebi and Klor (2010) show that terrorism has positively contributed to the economic success of defence-related industries in Israel (e.g., by creating demand for security products), but has hurt non-defence-related industries. Again, such effects may have distributional consequences; for instance, wages in defence-related industries are likely to increase, while wages in other industries (e.g., tourism) may suffer.

4.2.2 Empirical Approaches

To consider endogeneity in the inequality-terrorism nexus, we employ a *control-function negative binomial regression approach* (Cameron and Trivedi, 2013). As the first step of this approach, we regress our dependent variable (domestic terrorism) on a set of controls and the instrumental variable for inequality and store the error term from this regression. As the second step, we run a negative binomial regression of domestic terrorism on inequality, the residual from the first-stage regression (to control for endogeneity) and the same set of first-stage controls. Standard errors are bootstrapped at both regression stages.

4.2.3 Instrumental Variables

To account for endogeneity, we employ three different instrumental variables. Each instrument comes with specific advantages and disadvantages. Combining the evidence from different instrumental variables is nevertheless expected to allow us to provide a reasonable assessment as to how strongly endogeneity matters.

(1) Our first instrument for income inequality is simply its *ten-year-lag*. Such lag-approaches are widely used in econometric analyses. Reverse causation is less likely to matter when employing a ten-year lag. For instance, many terrorist organizations only survive for a few years (e.g., due to policing, splintering or competition with other groups); terrorist groups surviving for more than ten years are very rare (Young and Dugan, 2014). However, due to inertia and SWIID's imputation methods such a lag-approach may not be sufficient to fully expunge endogeneity.¹⁸ As another disadvantage, by construction the lag-approach reduces our sample size considerably.

(2) Our second instrument is the *relative size of mature-aged cohorts*, which refers to the size of the population between the ages of 40 and 59 in relation to a country's (total working-age) population between the ages of 15 and 69, with the data coming from United Nations Population Division (2015). This instrument is proposed by Higgins and Williamson (2002) and used by, inter alia, Jong-sun and Khagram (2005) and Leigh (2006). Higgins and Williamson (2002) argue that when the mature-aged cohorts are relatively large (i.e., "fat"), this ought to lead to a more equal distribution of income due to more labor market competition. In the words of Higgins and Williamson (2002: 269): "When those fat cohorts lie in the middle of the age-earnings curve, where life-cycle income is highest, [a] labor market glut lowers their income, thus tending to flatten the age-earnings curve. Earnings inequality is moderated." Following this line of reasoning, we expect a negative association between relative mature-aged cohort size and inequality.

However, one may argue that the inverse of a society with a relatively large mature working-age population, i.e., a particularly young society, may produce more political violence and terrorism, so that the excludability restriction no longer holds. Indeed, Urdal (2006) provides evidence that countries with a large young-age population (relative to the total population) are more likely to generate terrorism due to such a youth bulge stifling economic participation for younger members of these societies.¹⁹ On the other hand, besides Urdal (2006) there is no country-level evidence suggesting that countries with younger populations produce more

¹⁸ We thank a referee for raising these points.

¹⁹ However, Urdal (2006: 614) also notes that his terrorism data is of inferior quality, consequently calling for a "cautious interpretations of [his] results" concerning the effect of youth bulges on terrorism.

terrorism. Rather, Gassebner and Luechinger (2011: 254) in their review of 43 terrorism studies come to the conclusion that “citizens from countries with a large share of young people are less likely to be victimized and, importantly, not more likely to commit attacks. Especially the latter result contradicts the literature on ‘youth bulge’.” This would suggest that the exclusion restriction is valid after all.

(3) Our final instrument is the *value added in agriculture* (as share of GDP) collected by the *Statistics Division of the Food and Agriculture Organization of the United Nations*.²⁰ This measure reflects a country’s economic structure, where higher values indicate that it is more strongly dominated by agriculture. We expect a negative association between the relative importance of agriculture in a country’s economy and its level of income inequality. For instance, Kuznets (1955) argues that agrarian economies see less inequality than their industrialized counterparts primarily because processes accompanying industrialization (e.g., the inflow of “surplus labor” from rural areas into the cities) tend to disproportionately benefit only some (small) segments of society (e.g., the “industrialists”).²¹ At the same time, we do not expect the value added in agriculture to predict domestic terrorism. For one, there are no theoretical or empirical studies that link the relative importance of agriculture in a country’s economy to the emergence of terrorism. What is more, there is a very low correlation between the two variables ($r=-0.02$, $p=0.37$).²² Consequently, we expect terrorism to be affected by the value added in agriculture only through the latter’s effect on income inequality.

4.2.4 Instrumental-Variables Results

²⁰ The database can be accessed at <http://www.fao.org/faostat/en/>.

²¹ Kuznets (1955) predicts that strongly industrialized countries would see inequality decrease again when the gains from industrialization are eventually “democratized” (e.g., through a welfare system). However, empirical research provides little support for the “Kuznets curve” (e.g., Deininger and Squire, 1998). This is also true for our sample. That is, we find that the value added in agriculture negatively predicts income inequality (as it is expected and necessary for identification) but that there is no evidence of a curvilinear relationship (results available upon request).

²² A multivariate negative binomial regression using our usual controls also does not show that the value added in agriculture is a significant predictor of domestic terrorism (results available upon request).

The findings of the regressions accounting for endogeneity (Table 3) can be summarized as follows. First, and most importantly, income inequality remains a robust predictor of terrorism when we account for endogeneity regardless of which instrumental variable we employ.²³ Here, an examination of the first-stage regression results (via an F -test statistic on the excluded instruments in the first-stage regression) suggests that the employed instruments are not weak.²⁴ Third, while the inclusion of the first-stage residuals appears to be meaningful in some specifications (suggesting the presence of endogeneity), the IV- and non-IV estimates are not significantly different from each other (so that confidence intervals overlap). In other words, endogeneity does not matter strongly and the bias due to endogeneity appears to be benign. If anything, our IV-estimates suggests that the original estimates exhibit a downward bias, as shown by the non-IV-estimates also reported in Table 3 using samples identical to their respective IV-counterparts. Considering our main results, this suggests that the estimated effects of inequality on terrorism reported in Table 2 are rather conservative.

—Table 3 here—

4.3 Transmission Channels

So far, our empirical analysis has provided evidence that inequality is conducive to domestic terrorism. In this subsection we study which transmission channels may explain this association. As discussed in Section 2, inequality may induce terrorism by negatively affecting institutional quality as well as socio-economic conditions.

(1) To account for the indirect effect of inequality on domestic terrorism via poorer institutional outcomes, we consider the channels of the *rule of law*, *corruption* and *physical integrity rights*

²³ As a robustness check, we also run a series of IV-regressions using the Theil index as a measure of income inequality. We find that inequality measured by the Theil index is positively associated with terrorism when instrumenting it with relative mature-cohort size or value added in agriculture (we do not use the ten-year lag-approach due to its effect on sample size). The results of these robustness checks are available upon request.

²⁴ The first-stage regression results can be found in the appendix (Supplementary Table 2). Note that when we use the relative size of mature-aged cohorts as an instrument, we do not consider regional and time effects. This is because the instrument becomes too weak (as indicated by the associated F -test statistic going below 10) when these additional dummies are included.

(human rights). The first two variables are from the ICRG, while the latter is from Cingranelli et al. (2014).

(2) We scrutinize whether inequality indirectly affects terrorism through its effect on socio-economic development by considering two variables accounting for *domestic investment* (measured by *per capita fixed capital formation*) and *education* (*gross tertiary school enrollment*). These variables are drawn from the WDI.

To examine which institutional and/or socio-economic indicators explain (parts of) the effect of income inequality on terrorism, we proceed as follows. First, we regress the potential transmission variables on income inequality (plus the usual controls listed in Section 3.3) via OLS. Second, we run the same set of regressions using an IV-OLS approach to account for endogeneity, where inequality is instrumented by relative mature-cohort size and value added in agriculture. Here, we also report diagnostic statistics on instrument weakness (the first-stage *F*-statistics) and overidentifying restrictions (Hansen's *J*-statistic) to assess the validity of the IV-approach. Finally, we regress the number of domestic terrorist incidents on income inequality, the potential transmission variables and the usual controls, employing the negative binomial maximum-likelihood estimator. Finding that (i) income inequality affects a transmission variable in a statistically significant way and (ii) this transmission variable in turn similarly influences domestic terrorism (net of the influence of income inequality) would suggest that (iii) the effect of income inequality on terrorism is (partly) transmitted via the respective transmission channel.

Our empirical results due to the aforementioned empirical efforts are reported in Table 4. First, we find that income inequality negatively affects measures of governance and institutional quality. More income inequality results in a weaker rule of law, more corruption and a poorer human rights situation. Importantly, these findings also hold when an IV-OLS approach is used, where the used instruments appear to be valid. Our results thus reinforce earlier findings by Glaeser et al. (2003) and Landman and Larizza (2009) who find that income inequality undermines the quality of institutions. Second, we find that poor institutional quality in turn results in more domestic terrorism, mirroring earlier findings by, e.g., Choi (2010) and Walsh and Piazza (2010). Taken together, these findings suggest that the unfavorable effect of income inequality on institutional outcomes partially explains the positive association between income inequality and domestic terrorism. Finally, the total effect of inequality on terrorism is only

partially transmitted by its unfavorable effect on institutional outcomes.²⁵ For one, this may suggest that further transmitters not considered in our analysis may play a role. For another, this may indicate that there is also a *direct effect* of inequality on domestic terrorism. This latter interpretation would be in line with relative deprivation theory suggesting that terrorism (as a form of aggression) is also used as a means to vent anger frustration stemming from relative deprivation.

Considering the socio-economic channels, our findings suggest that no comparable transmission occurs. For one, the influence of inequality on education is not robust, given that the over-identification restrictions associated with the IV-approach are not valid. Furthermore, income inequality does not affect domestic investment. While domestic investment negatively determines domestic terrorism (a similar result is reported in Freytag et al., 2011), this effect is not related to any transmission effect (because inequality does not determine investment). Education does not influence domestic terrorism, so a transmission from inequality to terrorism via education cannot possibly be present.

—Table 4 here—

As a robustness check, we also run a classical mediation analysis (following the Baron-Kenny approach) as outlined in, e.g., Wu and Zumbo (2008). The results of this analysis are reported in the appendix (Supplementary Table 3). They also suggest that the total effect of inequality on domestic terrorism is partly due to the indirect ill effects of inequality on institutional quality (but not due to socio-economic effects), mirroring the results of Table 4. However, we do not want to overemphasize the mediation analysis findings, given the well-known weaknesses of classical mediation analyses with observational data (e.g., Imai et al., 2011); in particular, the findings should only be cautiously interpreted as being suggestive of underlying mechanisms rather than as being of a causal nature.²⁶

5. The Role of Redistribution

In the light of our findings, how can the inflammatory effects of income inequality on terrorism be alleviated? *Redistribution* appears to be a powerful policy tool. The reduction of income

²⁵ This is because income inequality still exerts a positive effect on domestic terrorism even when the relevant transmission channels are accounted for.

²⁶ We thank a referee for raising this point.

inequality through taxation and welfare policies ought to reduce grievances and frustration due to inequality that may otherwise result in terrorism.

5.1 Measuring Redistribution

To study the role of redistribution in the inequality-terrorism nexus, we extract another variable from the *Standardized World Income Inequality Database*: the Gini coefficient based on gross income, i.e., before taxes and other forms of redistribution are considered. This Gini coefficient thus reflects the *income inequality at the market-level*. We divide the Gini coefficient at the market-level (before taxation and redistribution can have an effect) by the Gini coefficient at the net-income level (after taxation and redistribution are accounted for); note that the Gini coefficient at the net-income level is the inequality indicator we used for all previous empirical efforts. The result of this division is a new variable we call *redistribution*. A higher value of this variable corresponds to stronger redistribution, which may be achieved by, e.g., more progressive taxation or transfer payment programs that benefit segments of society at the bottom of the income distribution (Solt, 2009).

5.2 Redistribution and Domestic Terrorism

In Table 5 we present negative binomial regression results employing the redistribution indicator as our main explanatory variable. The results indicate that higher levels of redistribution are associated with less domestic terrorist incidents (but not fewer victims from domestic terrorism). With respect to the controls, the results are virtually identical to the ones reported in Table 2, meaning that domestic terrorism is more likely to occur during times of civil war and in more populated (and densely populated) countries plagued by ethnic divisions, while further economic and political variables (democracy, per capita income, government consumption, economic growth, regime durability) are not consistently found to matter.

—Table 5 here—

Next, we want to consider the substantive effect of redistribution on terrorism. First, the IRR associated with the redistribution variable is $IRR=0.147$ (specification 1, Table 5). That is, a one-unit increase in the redistribution variable is, *ceteris paribus*, associated with an 85.3% decrease in terrorism. Second, the predictive marginal effects of redistribution on terrorism are plotted in Figure 2, where the remaining covariates are held at their mean (regional and time dummies are held at zero) and only the values of the redistribution variable varies. This analysis also shows that the effect of redistribution on terrorism is of practical significance. While our

model predicts approximately 9.1 domestic terrorist attacks per year and country when the redistribution variable is equal to unity (meaning that inequality is identical before and after redistribution), we only predict approximately 3.7 domestic terrorist incidents when the redistribution variable is equal to 1.5 (meaning that inequality is reduced to 33% of its initial value through redistribution). Similarly, we only predict 5.8 domestic terrorist incidents when redistribution is equal to 1.25, the sample mean.

—Figure 2 here—

In sum, these findings suggest that countries may be able to substantially reduce their terrorism risk through redistributive policies. To give an illustrative example, in our sample Canada was able to (on average) reduce income inequality by one third, moving from an average pre-redistribution Gini coefficient of 45.5 to a post-redistribution Gini coefficient of approximately 30. The country experienced a total of 24 terrorist incidents between 1984 and 2012. A country with similar economic, demographic and political characteristics where redistribution was almost absent is Argentina. Its average market-level Gini coefficient of 45 was only reduced to a net Gini coefficient of 42.5. Between 1984 and 2012 the country saw almost 300 terrorist incidents.

5.3 Transmission Channels

Finally, we want to consider through which transmission channels redistribution reduces terrorism. Methodologically, we proceed similar to Section 4.3 by first estimating the effect of redistribution on the various transmission channels and then estimating the effect of the transmission variables on domestic terrorism (net of the influence of redistribution). The corresponding results are reported in Table 6.²⁷

—Table 6 here—

First, redistribution is associated with better institutional quality, i.e. lower levels of corruption, a stronger rule of law and greater respect for human rights. These institutional improvements are in turn found to correlate negatively with terrorism. Taken together with our previous findings, this suggests that redistribution may cancel out the ill effects of income inequality on institutional quality. Second, while education is not found to matter, we find some evidence

²⁷ The results from a classical mediation analysis (reported in Supplementary Table 4) we conduct as a robustness check are also in line with the results reported below.

that redistribution is *negatively* related to domestic investment. This finding is consistent with macroeconomic theory suggesting that savings increase with income. As savings will be converted into investment, more inequality ought to result in more capital accumulation; a higher level of capital accumulation in turn constitutes an important engine of economic growth (Weil, 2013: 380-381). Thus, by depressing domestic investment redistribution may also have an unfavorable effect on domestic terrorism, partially cancelling out its beneficial effect on institutional conditions.

In general, the latter finding suggests that the role of redistribution in terrorism may not merely be a mirror image of the effect of income inequality on terrorism. Rather, further consequences of redistribution need to be taken into account. For instance, besides affecting investment, redistribution also tends to coincide with high taxation and potentially excessive public spending, which may be harmful to a country's economic life—and thus potentially conducive to terrorism—by, e.g., introducing inefficiencies and crowding out private economic activity (Scully, 2002).

6. Conclusion

Using data for a maximum of 113 countries between 1984 and 2012, we empirically assess whether income inequality is linked to terrorism. Our results indicate that higher levels of income inequality are associated with more domestic terrorist activity; the estimated effects are also economically substantive. Moreover, this main finding holds when endogeneity is accounted for. Considering the related transmission channels, we show that income inequality indirectly leads to terrorism by causing an erosion of institutional quality (corruption, the rule of law, human rights), while there is little evidence of indirect effects of inequality on terrorism via a deterioration of socio-economic conditions.

With respect to public policy, our findings suggest that policymakers may reduce domestic terrorism by keeping inequality in check. As evidenced by our study, redistributive efforts (which ameliorate income inequality created at the market-place) can indeed be effective in reducing inequality and, consequently, terrorist activity. We find that this latter effect works—in parts—by ameliorating institutional grievances (e.g., as redistribution strengthens the rule of law). However, policymakers have to recognize that redistribution does not merely cancel out the ill effects of income inequality but entails further, potentially unfavorable, consequences. For instance, redistribution may potentially coincide with high taxation and inefficiently large

public sectors. This may consequently not only crowd-out and disincentivize private economic activity but also create (new) discrete reasons for terrorist violence (e.g., anti-tax violence).

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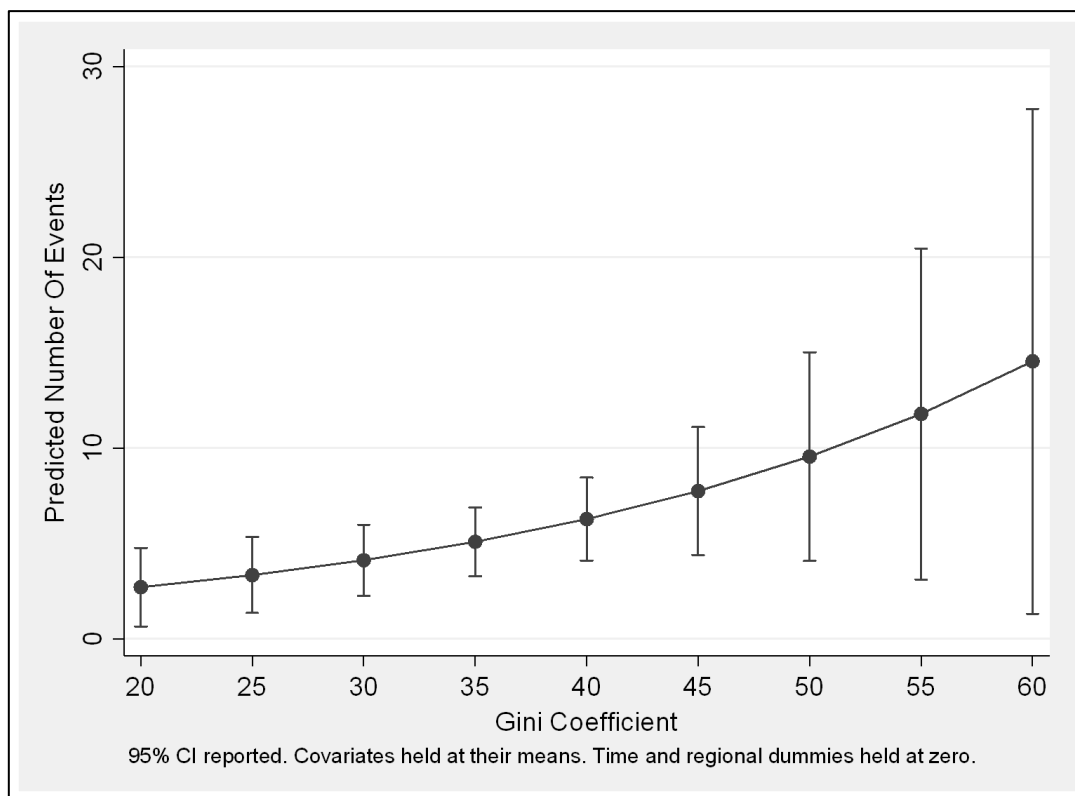


Figure 1: Predictive Margins for Various Levels of Income Inequality

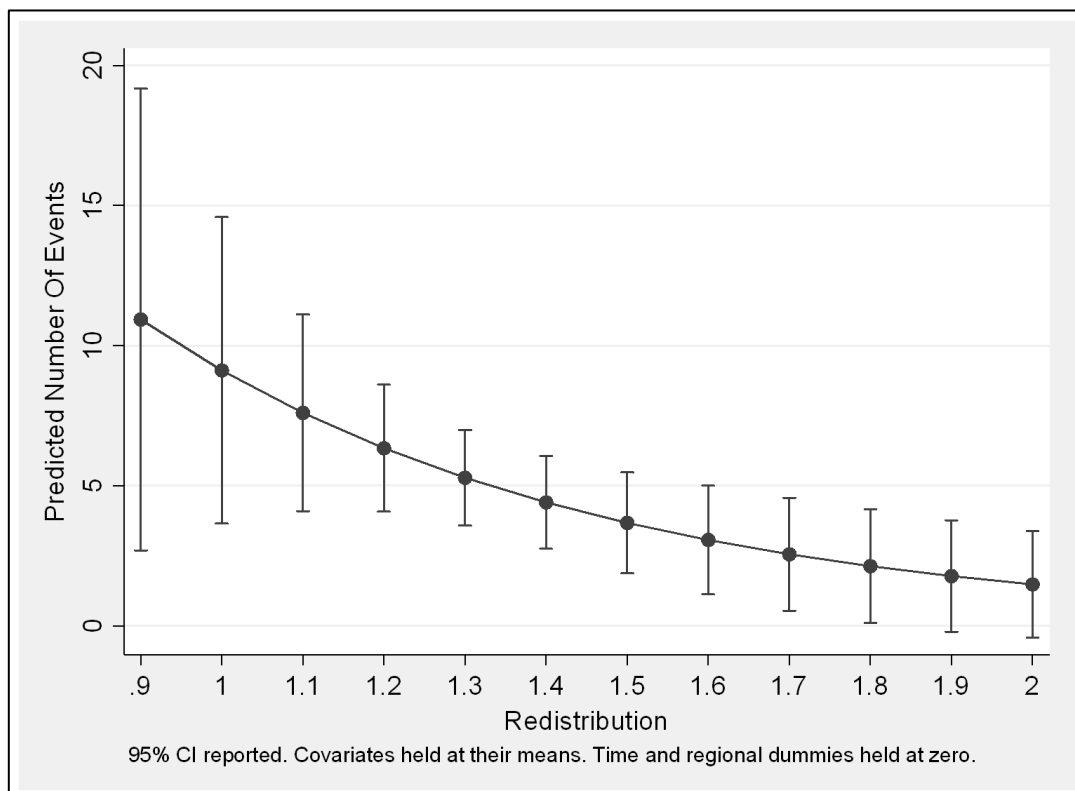


Figure 2: Predictive Margins for Various Levels of Redistribution

Variable	Observations	Mean	St. Dev.	Minimum	Maximum
Domestic Terrorist Incidents	3,011	12.80	48.75	0	1,252
Domestic Terrorism Victims	3,011	60.03	252.89	0	5,216
Income Inequality (Gini)	2,648	38.04	9.51	17.96	69.35
Democracy	3,088	7.18	3.15	0.5	10
Civil War	3,097	0.04	0.20	0	1
Population Size (logged)	3,088	16.43	1.50	12.39	21.02
Per Capita Income (logged)	3,014	8.08	1.65	4.73	11.36
Government Consumption	2,977	15.35	5.60	2.05	50
Excluded Population (logged)	2,730	1.80	1.47	0	4.50
Economic Growth	3,031	3.66	4.39	-29.59	34.50
Regime Durability	3,088	27.71	32.89	0	203
Population Density (logged)	3,057	4.00	1.37	0.24	8.93
Redistribution	2,648	1.24	0.28	0.91	2.28
Theil Index (logged)	2,043	3.50	0.87	1.06	6.07
Mature Cohort Size	3,088	0.29	0.06	0.17	0.44
Value Added in Agriculture	2,819	12.78	12.13	0.04	60.28
Rule of Law	3,088	6.22	2.45	0	10
Corruption	3,088	4.76	2.26	0	10
Physical Integrity Rights (Human Rights)	2,961	4.88	2.28	0	8
Domestic Investment	2,936	21.66	6.33	-2.42	59.61
Tertiary Schooling	2,231	30.81	24.58	0.12	113.98

Table 1: Summary Statistics

	(1)	(2)	(3)	(4)	(5)	(6)
Income Inequality $t-1$	0.071 (0.015)***	0.071 (0.015)***	0.067 (0.015)***	0.075 (0.014)***	0.066 (0.019)***	
Democracy $t-1$	0.075 (0.060)	0.075 (0.059)	0.079 (0.060)	0.044 (0.058)	0.116 (0.065)*	0.099 (0.064)
Civil War $t-1$	1.488 (0.273)***	1.497 (0.273)***	1.511 (0.269)***	1.492 (0.273)***	1.885 (0.272)***	1.122 (0.258)***
Population Size $t-1$	0.757 (0.100)***	0.758 (0.100)***	0.770 (0.097)***	0.755 (0.098)***	0.923 (0.117)***	0.776 (0.100)***
Per Capita Income $t-1$	-0.133 (0.135)	-0.132 (0.136)	-0.058 (0.165)	-0.054 (0.139)	-0.264 (0.174)	-0.165 (0.157)
Government Consumption $t-1$	0.003 (0.026)	0.004 (0.026)	0.002 (0.025)	0.013 (0.027)	0.009 (0.038)	0.021 (0.027)
Excluded Population $t-1$	0.441 (0.091)***	0.441 (0.091)***	0.453 (0.089)***	0.419 (0.090)***	0.719 (0.114)***	0.597 (0.095)***
Economic Growth $t-1$		0.007 (0.019)				
Regime Durability $t-1$			-0.004 (0.004)			
Population Density $t-1$				0.293 (0.102)***		
Theil Index $t-1$						0.422 (0.184)**
Dependent Variable	DA	DA	DA	DA	DV	DA
Regional Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R ²	0.107	0.107	0.108	0.111	0.058	0.105
No. of Observations	2,317	2,313	2,317	2,301	2,317	1,775

Notes: Constant not reported. Negative binomial regression results. DA = Number of domestic terrorist attacks. DV = Number of domestic terrorism victims. Robust country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Table 2: Domestic Terrorism and Income Inequality

	(1)	(2)	(3)	(4)	(5)	(6)
Income Inequality $t-1$	0.067 (0.016)***	0.051 (0.014)***	0.120 (0.018)***	0.042 (0.010)***	0.069 (0.029)**	0.072 (0.009)***
First-Stage Residual $t-1$	-0.055 (0.028)**		-0.093 (0.018)***		0.005 (0.034)	
Democracy $t-1$	0.130 (0.059)**	0.117 (0.059)**	0.003 (0.090)	0.056 (0.037)	0.073 (0.036)**	0.072 (0.037)**
Civil War $t-1$	1.471 (0.192)***	1.468 (0.192)***	1.693 (0.281)***	1.778 (0.290)***	1.475 (0.261)***	1.467 (0.245)***
Population Size $t-1$	0.926 (0.066)***	0.947 (0.064)***	0.760 (0.066)***	0.717 (0.072)***	0.749 (0.048)***	0.749 (0.048)***
Per Capita Income $t-1$	-0.067 (0.115)	-0.081 (0.112)	0.545 (0.077)***	0.298 (0.071)***	-0.144 (0.074)*	-0.139 (0.067)**
Government Consumption $t-1$	0.0049 (0.021)**	0.048 (0.021)**	-0.042 (0.016)***	-0.046 (0.016)***	0.005 (0.013)	0.004 (0.013)
Excluded Population $t-1$	0.739 (0.067)***	0.751 (0.068)***	0.297 (0.092)***	0.440 (0.081)***	0.442 (0.058)***	0.440 (0.055)***
Estimation Technique	CF-NBREG	NBREG	CF-NBREG	NBREG	CF-NBREG	NBREG
Instrument	Income inequality $t-10$		Fat tails $t-1$		Value Added in Agriculture $t-1$	
First-Stage F -Statistic	119.05		36.57		11.72	
Endogeneity Test (Pr. $>\chi^2$)	3.97 (0.04)**		26.66 (0.00)***		0.02 (0.89)	
Regional Dummies	Yes	Yes	No	No	Yes	Yes
Time Dummies	Yes	Yes	No	No	Yes	Yes
Number of Observations	1,256	1,256	2,282	2,282	2,272	2,272

Notes: Constant not reported. Dependent variable = Number of domestic terrorist attacks. NBREG= Negative binomial regression. CF-NBREG = Control-function negative binomial regression. Bootstrapped standard errors (1,000 replications) in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Table 3: Endogeneity in the Inequality-Terrorism Nexus

<i>Panel A: Effect of Inequality on Transmission Channels (OLS)</i>					
Transmission Channel →	Rule of Law	Corruption	Human Rights	Domestic Investment	Tertiary Education
Income Inequality _{t-1}	-0.058 (0.025)**	0.050 (0.013)***	-0.056 (0.014)***	-0.006 (0.064)	-0.432 (0.189)**
<i>Panel B: Effect of Inequality on Transmission Channels (IV-OLS)</i>					
Income Inequality _{t-1}	-0.124 (0.051)**	0.068 (0.032)**	-0.149 (0.045)***	0.138 (0.186)	-1.699 (0.492)***
First-Stage <i>F</i> -Statistic	215.81	215.81	214.27	206.47	112.78
Hansen <i>J</i> -Statistic (Pr.> χ^2)	2.18 (0.14)	1.43 (0.23)	0.61 (0.43)	1.34 (0.25)	8.22 (0.00)***
<i>Panel C: Effect of Transmission Variables on Domestic Terrorism (Negative Binomial Regression)</i>					
Income Inequality _{t-1}	0.056 (0.015)***	0.061 (0.014)***	0.031 (0.015)**	0.069 (0.014)***	0.074 (0.019)***
Rule of Law _{t-1}	-0.210 (0.064)***				
Corruption _{t-1}		0.240 (0.062)***			
Human Rights _{t-1}			-0.490 (0.055)***		
Domestic Investment _{t-1}				-0.075 (0.021)***	
Tertiary Education _{t-1}					-0.003 (0.009)
<i>Notes:</i> Constant not reported. Dependent variables = Transmission variables in Panels (A) and (B) and number of domestic terrorist attacks in Panel (C). Instruments for inequality in (B) = Mature cohort size and value added in agriculture. Hansen <i>J</i> -Statistic = Overidentification test. For all models the following covariates (all lagged) are included: democracy, civil war, population size per capita income, government consumption, excluded population as well as time and regional dummies. Country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.					

Table 4: Transmission Channels in the Inequality-Terrorism Nexus

	(1)	(2)	(3)	(4)	(6)
Redistribution $t-1$	-1.920 (0.765)**	-1.907 (0.768)**	-1.832 (0.728)**	-2.265 (0.760)***	-1.371 (0.968)
Democracy $t-1$	0.098 (0.060)	0.098 (0.060)	0.104 (0.060)*	0.070 (0.058)	0.138 (0.064)**
Civil War $t-1$	1.462 (0.266)***	1.468 (0.265)***	1.500 (0.262)***	1.462 (0.260)***	1.820 (0.267)***
Population Size $t-1$	0.774 (0.108)***	0.774 (0.108)***	0.789 (0.100)***	0.767 (0.106)***	0.954 (0.121)***
Per Capita Income $t-1$	-0.022 (0.189)	-0.021 (0.189)	0.070 (0.208)	0.069 (0.189)	-0.244 (0.212)
Government Consumption $t-1$	0.027 (0.027)	0.028 (0.028)	0.024 (0.027)	0.041 (0.028)	0.040 (0.038)
Excluded Population $t-1$	0.474 (0.088)***	0.475 (0.088)***	0.486 (0.088)***	0.456 (0.087)***	0.711 (0.109)***
Economic Growth $t-1$		0.003 (0.020)			
Regime Durability $t-1$			-0.006 (0.004)		
Population Density $t-1$				0.293 (0.109)***	
Dependent Variable	DA	DA	DA	DA	DV
Regional Dummies	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes
Pseudo R ²	0.102	0.102	0.103	0.106	0.056
No. of Observations	2,317	2,313	2,317	2,301	2,317

Notes: Constant not reported. Negative binomial regression results. DA = Number of domestic terrorist attacks. DV = Number of domestic terrorism victims. Robust country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Table 5: Domestic Terrorism and Redistribution

<i>Panel A: Effect of Inequality on Transmission Channels (OLS)</i>					
Transmission Channels →	Rule of Law	Corruption	Human Rights	Domestic Investment	Tertiary Education
Redistribution _{t-1}	1.387 (0.649)**	-2.171 (0.602)***	2.231 (0.488)***	-4.310 (2.256)*	5.706 (8.904)
<i>Panel B: Effect of Transmission Variables on Domestic Terrorism (Negative Binomial Regression)</i>					
Redistribution _{t-1}	-1.220 (0.705)*	-1.404 (0.748)*	-0.656 (0.657)	-2.299 (0.746)***	-1.474 (0.796)*
Rule of Law _{t-1}	-0.240 (0.065)***				
Corruption _{t-1}		0.252 (0.066)***			
Human Rights _{t-1}			-0.515 (0.051)***		
Domestic Investment _{t-1}				-0.086 (0.018)***	
Tertiary Education _{t-1}					-0.001 (0.010)
<i>Notes:</i> Constant not reported. Dependent variables = Transmission variables in Panel (A) and number of domestic terrorist attacks in Panel (B). For all models the following covariates (all lagged) are included: democracy, civil war, population size per capita income, government consumption, excluded population as well as time and regional dummies. Country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.					

Table 6: Transmission Channels in the Redistribution-Terrorism Nexus

Appendix A. List of Countries

Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bangladesh, Belarus, Belgium, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Gambia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Latvia, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Mali, Malta, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russia, Senegal, Sierra Leone, Singapore, Slovak Republic, Slovenia, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Syria, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Kingdom, United States, Uruguay, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe.

Appendix B. Supplementary Tables

	(1)	(2)	(3)	(4)	(5)
Income Inequality $t-1$	0.061 (0.015)***	0.060 (0.015)***	0.051 (0.016)***	0.102 (0.025)***	0.057 (0.016)***
Democracy $t-1$	0.080 (0.058)	0.172 (0.059)***	0.163 (0.059)***	0.172 (0.088)**	0.097 (0.064)
Civil War $t-1$	1.538 (0.261)***	1.581 (0.313)***	1.643 (0.292)***	1.220 (0.318)***	1.468 (0.240)***
Population Size $t-1$	0.718 (0.106)***	0.764 (0.096)***	0.711 (0.102)***	0.465 (0.163)***	0.847 (0.093)***
Per Capita Income $t-1$	-0.107 (0.144)	-0.272 (0.133)**	-0.210 (0.146)	-0.130 (0.186)	-0.134 (0.144)
Government Consumption $t-1$	-0.002 (0.027)	0.007 (0.028)	-0.001 (0.031)	-0.012 (0.042)	0.010 (0.029)
Excluded Population $t-1$	0.372 (0.099)***	0.495 (0.089)***	0.423 (0.098)***	0.420 (0.118)***	0.522 (0.097)***
Sample	No Western Europe	No South America	No Western Europe and South America	Cold War Era (1984- 1992)	Post-Cold War Era (1993- 2012)
Regional Dummies	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes
Pseudo R ²	0.103	0.110	0.105	0.089	0.122
No. of Observations	1,891	2,059	1,633	578	1,739

Notes: Constant not reported. Negative binomial regression results. Dependent variable: Number of domestic terrorist incidents. Robust country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Supplementary Table 1: Domestic Terrorism and Income Inequality (Sub-Samples)

	(1)	(2)	(3)
Income Inequality $t-10$	0.714 (0.065)***		
Fat Tails $t-1$		-93.492 (15.461)***	
Value Added in Agriculture $t-1$			-0.381 (0.111)***
Democracy $t-1$	-0.192 (0.197)	0.673 (0.215)***	0.161 (0.204)
Civil War $t-1$	0.911 (0.725)	0.684 (1.432)	1.632 (1.533)
Population Size $t-1$	0.279 (0.245)	0.010 (0.445)	0.015 (0.493)
Per Capita Income $t-1$	0.150 (0.431)	-0.424 (0.554)	-3.264 (0.767)***
Government Consumption $t-1$	0.030 (0.074)	-0.134 (0.130)	0.001 (0.115)
Excluded Population $t-1$	0.330 (0.279)	0.978 (0.356)***	0.682 (0.393)*
Regional Dummies	Yes	No	Yes
Time Dummies	Yes	No	Yes
R ²	0.849	0.461	0.654
No. of Observations	1,256	2,324	2,313

Notes: Constant not reported. OLS regression results. Dependent variable: Income inequality (Gini coefficient). Robust country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Supplementary Table 2: First-Stage Regression Results

Mediator (<i>M</i>)	Inequality → Mediator	Mediator → Terrorism	Percent Mediated
Rule of Law	-0.052 (0.022)**	-0.201 (0.071)***	16.6%
Corruption	0.050 (0.014)***	0.270 (0.060)***	18.9%
Physical Integrity Rights	-0.054 (0.013)***	-0.518 (0.050)***	52.4%
Domestic Investment	-0.005 (0.063)	-0.072 (0.020)***	n/a
Tertiary Scholl Enrollment	-0.266 (0.187)	-0.005 (0.009)	n/a

Notes: For all models and tests the following covariates (all lagged) are included: democracy, civil war, population size per capita income, government consumption, ethnic tensions (ICRG data) as well as time and regional dummies. Country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Supplementary Table 3: Mediation Analysis for Inequality-Terrorism Nexus

Mediator (<i>M</i>)	Redistribution → Mediator	Mediator → Terrorism	Percent Mediated
Rule of Law	1.474 (0.594)**	0.235 (0.068)***	26.3%
Corruption	-1.856 (0.572)***	0.287 (0.065)***	28.8%
Physical Integrity Rights	2.304 (0.476)***	-0.542 (0.046)***	76.1%
Domestic Investment	-5.361 (2.185)**	-0.087 (0.018)***	17.5%
Tertiary Scholl Enrollment	1.485 (8.652)	-0.003 (0.009)	n/a

Notes: For all models and tests the following covariates (all lagged) are included: democracy, civil war, population size per capita income, government consumption, ethnic tensions (ICRG data) as well as time and regional dummies. Country-clustered standard errors in parentheses. *p<0.1, **p<0.05, ***p<0.01.

Supplementary Table 4: Mediation Analysis for Redistribution-Terrorism Nexus